Low-volume high-intensity interval training enhances muscular power as well as cardiorespiratory fitness

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In rebutting Wisloff et al., Holloway and Spriet (2015) caution against forgoing activities such as resistance training for health benefit. Indeed, it is increasingly evident that maintaining muscle power and cardiorespiratory fitness (CRF) are arguably the most effective secondary prevention strategies individuals can undertake during advancing age. For instance, each 1-MET improvement in CRF equates to ~10-25% reduction in mortality risk (Kaminsky et al. 2013) and muscle power better predicts future frailty and loss of independence than strength (Reid & Fielding, 2013). Wisloff et al. (2015) reported that the majority of clinical studies examining HIIT employ intensities ranging between 80-100\%HR\textsubscript{max} rather than low-volume HIIT, performed supra-maximally (e.g. ‘all-out’), yet benefits of the latter include simultaneous improvements in CRF, power and functional power (e.g. get-up-and-go test) (Cantrell et al., 2014; Buckley et al., 2015; Adamson et al., 2014) for a lower exercise time commitment. For example, 3 min of low-volume HIIT, performed every 5 days increases CRF (Grace et al., 2015) and muscular power (Sculthorpe et al. 2015) in sedentary ageing men, more so than is observed amongst younger cohorts (Weston et al., 2014). Furthermore, time-efficient training is of pertinence to pre-surgical patients as rapid improvements in pre-operative CRF lessens surgical risk and facilitates recovery (Valkenet et al., 2011; Singh et al., 2014; Weston et al., 2016). As such, we firmly believe it is prudent to further our understanding of the potential wide-ranging health benefits of different forms of HIIT before its role in risk reduction and disease treatment is downplayed.

References


